

REMARKS

Claim 1 is amended to better clarify the structure of the claimed invention. The amendment introduces no new matter.

Reinstatement of claims 2 and 6 – 16 is requested upon allowance of a generic or linking claim.

The rejection of claims 1 and 3 – 5 under 35 USC 103(a) over McDonald, US Patent 5,066,108 is respectfully traversed. The claimed invention provides a head-up display system that prevents double-imaging in the head-up display. By contrast, McDonald describes a system for preventing reflections from the elements of a display device, such as an LCD display. McDonald does not describe or suggest the double-imaging problem solved by the claimed invention, and provides no motivation to modify the teachings and structure of McDonald to arrive at a solution to the problem solved by the claimed invention.

In support of the rejection, the Office Action asserts that it would be obvious and/or within the level of one of ordinary skill in the art to modify the elements of McDonald to arrive at the claimed invention. The Office Action states that the modification of McDonald would consist of forming a unitary optical device from the components listed in McDonald. However, it is not clear how McDonald can be modified to arrive at the claimed invention while retaining its original operation.

FIG. 3 of McDonald depicts the invention of McDonald as used for a vehicle instrument display, such as a head-up display. The Office Action notes

the embodiment in FIG. 3 as teaching a transparent plate in the form of a windshield. FIG. 3 shows a circular polarizer 121 and a quarter-wave retarder 113 as distinct elements away from the windshield. The circular polarizer 121 is positioned so that light reflected from imaging lens 117 will not reach the eye of a driver. To further prevent reflections, McDonald also teaches that the circular polarizer 121 should be oriented perpendicular to the windshield, so that light reflected from the circular polarizer 121 will not reach the eye of the driver.

In describing FIG. 3, McDonald states:

In the display of FIG. 3, the circular polarizer 121 is perpendicular to the windshield, and the quarter-wave retarder 113 is parallel to the circular polarizer 121 to prevent reflections caused by such elements from reaching the eyes of the driver.

(McDonald, Col. 4, lines 24 – 28.)

Thus, McDonald explicitly teaches that the circular polarizer 121 should be positioned perpendicular to the windshield or transparent plate. Additionally, McDonald teaches that quarter-wave retarder 113 should be parallel to circular polarizer 121, so quarter-wave retarder 113 is also oriented perpendicular to the windshield.

To combine the circular polarizer 121 and quarter-wave retarder 113 with a display panel as a laminate or other unitary optical device, these elements would all need to be roughly parallel. As noted above, McDonald teaches that the circular polarizer should be maintained perpendicular to the windshield in order to prevent reflections off of the circular polarizer from reaching the eye of a

viewer. In order to implement both the teaching of McDonald and the allegedly “obvious” improvement of forming a unitary optical device, the display panel would also have to be oriented roughly perpendicular to the windshield. However, the angle of the display panel is constrained by the need to allow the viewer (driver) to see the head-up display, so a roughly perpendicular angle is not suitable. Thus, one of skill in the art would understand McDonald as teaching away from forming the laminate of the claimed invention, as McDonald teaches that there is an advantage to keeping the optical elements separated – namely, preventing reflected light from reaching the eye of the driver while still maintaining a desirable angle for the display panel relative to the windshield or other transparent surface.

As part of a prima facie case of obviousness, there must be a motivation to modify a reference to arrive at a claimed invention. Additionally, the reference must remain operable for its original purpose after modification. The rejection of claims 1 and 3 – 5 as obvious over McDonald does not satisfy either of these criteria. First, McDonald does not provide a motivation to modify its teachings to arrive at the claimed invention. McDonald does not identify the problem solved by the claimed invention. Given that McDonald does not acknowledge the existence of the problem of the claimed invention, it is not surprising that McDonald provides no motivation to modify its teachings and structure to arrive at the claimed invention. Thus, McDonald fails to provide the necessary

motivation to modify its teachings that is required for a prima facie case of obviousness.

Additionally, an effort to modify McDonald to arrive at the claimed invention produces a device which is no longer operable for its original purpose. Forming a unitary optical device out of the optical elements in McDonald would produce a device where the optical display is perpendicular to the transparent plate. This fails to provide the desired head-up display, as light from the optical display would not reflect off of the windshield and reach the eye of the driver. Positioning the unitary optical device at any other angle would require one of skill in the art to ignore an express teaching of the McDonald reference. Thus, when the teachings of McDonald are considered as a whole, McDonald cannot be modified to arrive at the claimed invention while still remaining functional for its intended purpose, as is required for a prima facie case of obviousness. For at least these reasons, reconsideration and withdrawal of this rejection are respectfully requested.

In view of the foregoing, the application is respectfully submitted to be in condition for allowance, and prompt favorable action thereon is earnestly solicited.

If there are any questions regarding this amendment or the application in general, a telephone call to the undersigned would be appreciated since this should expedite the prosecution of the application for all concerned.

If necessary to effect a timely response, this paper should be considered as a petition for an Extension of Time sufficient to effect a timely response, and please charge any deficiency in fees or credit any overpayments to Deposit Account No. 05-1323 (Docket #038788/50290).

Respectfully submitted,

January 21, 2004



J. D. Evans
Registration No. 26,269
Lawrence E. Carter
Registration No. 51,532

CROWELL & MORING LLP
Intellectual Property Group
P.O. Box 14300
Washington, DC 20044-4300
Telephone No.: (202) 624-2500
Facsimile No.: (202) 628-8844

JDE:LEC

300183